#3585
OK

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

August 4, 2010

TO: File

THRU: James D. Smith, Permit Supervisor and Team Lead JDS 08/24/2010

FROM: James Owen, Reclamation Engineer JCO

RE: Amendment to Update MRP Volume 11 North Rilda Canyon Portal Facilities, Energy West Mining Company, Deer Creek Mine, C/015/0018, Task #3585

SUMMARY:

On June 30, 2010, the Utah Division of Oil Gas & Mining received an application for an amendment to Volume 11, Volume 11 Appendix A, and Volume 11 Appendix B of Deer Creek Mine's Mining and Reclamation Permit (MRP). PacifiCorp submitted the application through its subsidiary, Energy West Mining Company.

The amendment to update Volume 11 was submitted in three parts:

- Submittal 1 – Update Volume 11, Volume 11 Appendix A, and Volume 11 Appendix B text, maps and data.
- Submittal 2 – Update bonding calculations for Rilda Canyon facilities
- Submittal 3 – Reduce the permit area for the Deer Creek Mine to include only those areas that are currently bonded.

The Engineering Section provided with the application contains general descriptions, information, and design criteria for operation and reclamation of the engineering aspects associated with the North Rilda and Mill Fork areas.

The application is recommended for approval.

TECHNICAL ANALYSIS:

OPERATION PLAN

MINING OPERATIONS AND FACILITIES

Regulatory Reference: 30 CFR 784.2, 784.11; R645-301-231, -301-526, -301-528.

Analysis:

The applicant states that mining operations support facilities exist and have been constructed in Rilda Canyon, a tributary of Huntington Canyon. These facilities include includes access and mine fan portals, exhaust fan, facilities pad, ancillary facilities, fuel dock, rock dust tank, sediment pond, sediment basin, waste and waste rock storage bins, substation, power line, fan, water storage tank, pump house, MCC building, drainage systems, and covered storage buildings.

Actual construction and engineering design drawings for the Rilda facilities were developed by Jones and DeMille Engineers and were included with the application in Volume 11, Appendix Volume 11A – Engineering, Appendix H.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

EXISTING STRUCTURES:

Regulatory Reference: 30 CFR 784.12; R645-301-526.

Analysis:

Rocky Mountain Power owns and operates 25KV electrical power transmission line that supplies electrical power to the Left Fork fan facilities. This line, prior to construction, was located on the north side of Emery County Road #306. This transmission line required relocation to the south side of the then proposed Rilda Canyon Portal Facilities. Energy West coordinated with Rocky Mountain Power to establish a new right of way for the transmission line and completed this relocation activity in May 2005. Water wells also exist in Rilda Canyon near the disturbed area boundary.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

RELOCATION OR USE OF PUBLIC ROADS

Regulatory Reference: 30 CFR 784.18; R645-301-521, -301-526.

Analysis:

Emery County Road #306 runs approximately 3.0 miles from Huntington Canyon road, Highway 31, to the turn around area in the Left Rilda Fork Canyon. A portion of this road is located within the disturbed boundary area of the Rilda Canyon Portal Facilities. Energy West has worked with Emery County Special Services District #1 and the Emery County Commission to develop an agreement to suspend public use of that portion of EC #306 that runs through the facilities area. The Agreement is located in Volume 11 Appendix B. Approximately 2,300 feet of the road has been temporarily eliminated through the facilities throughout the life of the mine.

During the winter months, snowfall depths on the access road can hamper and greatly delay access during emergency situation. Therefore, to maintain emergency preparedness, if and when snow depth along the access road becomes greater than 12 inches, snow removal activities will be practiced. Snow removal activities will be accomplished by push, pickup, load and haul techniques.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

COAL RECOVERY

Regulatory Reference: 30 CFR 817.59; R645-301-522.

Analysis:

The applicant states that the maximum amount of economically recoverable coal will be extracted from the North Rilda Area of the Deer Creek Mine with the exception of barrier pillars, which must be left to ensure the integrity of the mine entries. Coal mining and reclamation operations shall be conducted to maximize the utilization and conservation of the coal, while

utilizing the best technology available to maintain environmental integrity. No coal processing or coal transportation facilities will be utilized at Rilda facilities.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

SUBSIDENCE CONTROL PLAN

Regulatory Reference: 30 CFR 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-724.

Analysis:

Subsidence Control Plan

The Deer Creek subsidence monitoring and control plan, which has been in place since 1980, has produced data that documents subsidence and allows the applicant to predict the amount of future subsidence that may occur. As of 1987, the operator began collecting subsidence data solely by aerial photography.

A survey has been conducted on the portion of East Mountain, which could possibly be affected by the mining of coal from the North Rilda and Mill Fork area. No significant subsidence is expected is association with the Rilda Canyon Portal facilities. If at any point, subsidence impacts occur, the applicant will restore, to the extent technologically and economically feasible, those surface lands that were affected.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

Analysis:

The Rilda Canyon operations two roads is association with the North Rilda Canyon Portal facilities. These roads are: (a) Left Fork Rilda Canyon Access Road and (b) Emery County Road #306 (Rilda Canyon Portal Facility).

The Left Fork Rilda Canyon Access Road is approximately 1150 feet in length (Maps 3-9A & 3-9B). It follows the north side of the left fork of Rilda Canyon from the end of the county road to the facility pad. Emery County Road #306 runs approximately 3.0 miles from Huntington Canyon road, Highway 31, to the turn around area in the Left Rilda Fork Canyon. A portion of this road is located within the disturbed boundary area of the Rilda Canyon Portal Facilities. This road is utilized by traffic related to the mine as well as for public, recreational, and grazing purposes. The road has been asphalted with a trailhead and parking area constructed east of the Rilda Canyon Portal facility.

Road Classification System

Only one primary road exists within the disturbed are of the Rilda Canyon Portal facility area. The road begins at the mine gate (the end of public access from EC #306) and terminates at the facilities pad. This road will be utilized daily by mine personnel and supply truck deliveries. The length of the primary road is approximately 1,326 feet. Design details for the road are located in Volume 11, Appendix Volume 11A, Engineering: Appendix G.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Disposal of Noncoal Mine Wastes

All non-coal wastes generated during mining activities and removed from the mine through the Rilda Canyon portals will be placed and stored in a controlled manner in a designated portion of the disturbed area as shown on Map 500-3. The materials will be removed from the site and disposed of in an approved disposal facility.

The facility storage waste, rock, and waste rock storage bins are located on the east end of the facility pad and are used for bulk storage of rock used in the mine, as well as temporary storage for garbage and waste rock materials produced from mining operations. The bins are constructed of reinforced concrete. The waste bin encloses a portable steel dumpster that is covered by netting which keeps litter from blowing away in windy conditions. The waste rock

bin temporarily stores waste rock that is hauled out of the mine. When the bin is full, the waster rock is loaded and hauled to the Deer Creek waste rock site where it is permanently stored.

Coal Mine Waste

Previous mining occurred in Rilda Canyon at the Leroy Mine, Rominger Mine, Jeppson Mine, and Helco Mine. Map 500-1 shows pre-disturbed areas associated with these mines. At reclamation of these mines, mine waste material was buried on-site. It is not known to what extent or volume coal waste was buried throughout the area. The applicant states that underground development waste, coal processing waste and excess spoil will continue to be disposed of in accordance with plans approved by the Division and MSHA

Refuse Piles

The applicant states that there is no plans to construct refuse piles within the facilities are in Rilda Canyon. All refuse that is transported through the Rilda Canyon portals is temporarily stored in a refuse bunker. As the bunker fills to capacity, the refuse is transported by truck to the Deer Creek waste rock site in Huntington Canyon for permanent storage.

Impounding Structures

In 2006, coal and mine waste were excavated and removed from the sediment pond area by track-hoe and truck. The quantity of coal removed was 744 tons (accounted for by weigh scales) or 249 cubic yards. This coal was shipped by truck to the Huntington Power Plant and utilized for power generation. Coal waste removed from the site was approximately 2000 cubic yards. This material was transported by truck to the Deer Creek Waster Rock site for permanent disposal.

Return of Coal Processing Waste to Abandoned Underground Workings

The applicant states that underground development waste, coal processing waste and excess spoil will continue to be disposed of in accordance with plans approved by the Division and MSHA. There are no plans to return coal-processing wastes to the underground workings at the Deer Creek Mine. All coal is shipped via beltline through the Deer Creek Canyon Portals.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

General

Two separate drainage systems are utilized at the facility site and are classified as either "undisturbed" or "disturbed". The undisturbed system collects water above the facility pad from side slopes adjacent to the sire and coveys it pas the disturbed area into the natural channel of Rilda Canyon Creek. The disturbed collections system collects the runoff from the facilities pad and storage areas and conveys it to the sedimentation basin. This system consists of concrete catch basins, CMP culverts and opened ditches designed to adequately collect and pass the peak flow from a 10yr/6hr precipitation event. Map 5003 depicts the locations of hydraulic facilities and systems.

Sediment Control Measures

Sediment control allows of undisturbed runoff to bypass the facilities via a diversion ditch and culvert system into Rilda Creek. Disturbed runoff from the facilities pad area reports to a single drop drain diverted to the sediment basin via a buried culvert system. Overflow from the disturbed system is diverted through a buried culvert to the sediment pond. Volume 11, Appendix Volume B – Hydrology contains the specific designs for the system.

A sediment basin is located east of the rock storage area. This structure collects runoff from the facilities pas and road access areas. The basin is equipped with an open riser extending vertically. The riser allows any silt-laden runoff to impound behind its embankment. Excess runoff will be conveyed via a 20 inch High Density Polyethylene pipeline to the sediment pond.

Siltation Structures: General

A silt fence, ditch, and other appropriate siltation control structures are in place and used to prevent erosion from the topsoil stockpile area.

Siltation Structures: Sedimentation Ponds

The Rilda Canyon facilities include construction of a single sedimentation pond located at the eastern extent of the disturbed area. Analysis and design criteria used to determine the size and hydraulics related to the construction and operation of the sedimentation pond and all supporting drainage structures are included in the Drainage and Sediment Control Plan. The pond encompasses approximately 1.0 acres of disturbed land. Complete plans and designs for the pond are found in Volume 11 Appendix Volume-Hydrology Appendix B.

Findings:

There are no impoundments or sedimentation ponds that meet the size or other qualifying criteria of MSHA, 20 CFR Part 7. All impoundments or sedimentation ponds utilized by operations in Rilda Canyon meet the minimum requirements of this section of the Utah Coal Mining Rules.

SUPPORT FACILITIES AND UTILITY INSTALLATIONS

Regulatory Reference: 30 CFR Sec. 784.30, 817.180, 817.181; R645-301-526.

Analysis:

Because of the need to expand mining operations, surface support facilities are required in Rilda Canyon. This includes access and mine fan portals, exhaust fan, facilities pad, ancillary facilities, fuel dock, rock dust tank, sediment pond, sediment basin, waste and waste rock storage bins, substation, MCC building, drainage systems, and covered storage buildings.

As-built drawings of the support facilities in found in Volume 11, Appendix Volume 11A – Engineering, Appendix H. During development of the Rilda Portal Facilities two separate surface breakouts were constructed/installed: mine (intake) access and ventilation (exhaust) fan opening. Both portals were developed (from underground) as rock slopes through the upper member of the Star Point Sandstone from the portal facility area to an interception point in the Hiawatha Coal Seam. Methods used to construct this tunneled portal slope were conventional drill and shoot methods. The dimensions of the portals are approximately 20'X9'. The fan is constructed at the west portal. Mine equipment and laborers will use the east portal to access the northwestern part of the Deer Creek Mine.

The facilities pad is constructed utilizing a Hilfiker wall system on the south side of the pad. The fill material with the pad consists of existing subsoil material and imported granular fill. The pad is lined with a welded impermeable geofabric membrane topped with 9" of concrete. All precipitation that intercepts the pad is collected through a single drop inlet and piped to a sediment basin. Map 500-3 depicts drainage control locations.

The fuel dock facility is located near the roadway access on the south side of the pad. It is a covered facility that is self-contained. The facility includes two steel storage tanks, both with 2,500-gallon capacity. A 140-ton capacity steel rock dust silo is located on the north side of the pad. The silo is mounted on a concrete foundation. Rock dust is pumped into specially equipped rock dust trailers/trucks. A lift station is located on the south side of the pad next to the fuel dock. The lift station is a device that allows longwall equipment to be loaded and unloaded from flatbed trailers.

There are six covered storage bins throughout the facilities pad area. These bins are utilized to store materials and supplies which will be used as part of the mining operations. The bins are constructed of 6" box beam steel and covered on three sides. Map 500-3 depicts the locations of the storage bins.

Power is supplied to the Rilda Canyon facilities via a 25KV utility service line, which parallels the south side of the facilities pad. The substation splits the power service into various supply lines and powers the surface operations on the pad. This facility occupies approximately 2,150 square feet and is completely enclosed by a 7' chain link fence. The applicant states that all design and construction processes comply with OSHA and NEC safety standards for platform and electrical installations.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

SIGNS AND MARKERS

Regulatory Reference: 30 CFR Sec. 817.11; R645-301-521.

Analysis:

Permit area identification signs are placed and maintained at each point of access from public roads. Signs identify the business name, address, telephone number, and DOGM permit number. Perimeter markers are placed around all disturbed areas at reasonable sight distances. Areas along perennial streams (within 100 feet) are considered buffer zones and are appropriately posted as such. The topsoil stockpile area is appropriately posted as such.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

USE OF EXPLOSIVES

Regulatory Reference: 30 CFR Sec. 817.61, 817.62, 817.64, 817.66, 817.67, 817.68; R645-301-524.

Analysis:

General Requirements

The Deer Creek Mine is a developed and producing mine and there is no anticipated need for any use of explosives or any surface blasting activities incident to the underground mining activities. The applicant states that if circumstances develop that require surface blasting activities, a plan will be initiated in accordance with R645-301-524.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Mining Facilities Maps

Typical construction sequencing is presented on Map 500-2 in the Maps Section of the MRP. This map shows the construction sequences that have been used to construct the mining facilities. Plan view of the existing land surface configuration for the coal mining and reclamation operations in the North Rilda Area are found on maps 500-3. Map 500.3 shows a plan view of the disturbance for the 6.77-acre mine facility site as well as the location of the topsoil storage areas. The as-built design for the topsoil pile shows a fenced area approximately 0.51 acres.

A mass balance analysis was completed and submitted with the application (Table 500-1). The information in the table illustrates the cuts and fills required for constructing the facility pad and sediment pond. Map 500-4 shows the cross sections through the sediment pond. Carlson Software was used to calculate the total cut and fill volumes. The as built mass balance analysis includes the facilities & pond area, topsoil stockpile, concrete volumes, hard armor areas, coal/coal waste removed from area, and culvert areas. Constructed building and facilities are shown on Map 500-3.

Certification Requirements

Applicable cross sections and maps have been included or referenced within the application documents. They have been prepared by, or under the direction of, and certified by a qualified, registered, professional engineer.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

RECLAMATION PLAN

GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

Analysis:

At final reclamation, the applicant intends to conduct the following reclamation steps:

1. Remove existing structures.
2. Remove buried diversion systems, where necessary, and provide 100yr/6hr storm event channels.
3. Re-contour the disturbed area to blend in with the existing surroundings.
4. Stabilize fill structures.
5. Reconstruct EC #306
6. Reduce sediment loading to receiving streams by incorporating Best Management Practices.

7. Vegetate all disturbed areas to meet minimum requirements of plant cover, diversity and production as compared to the reference areas.
8. Meet the stated post mining land use.
9. Achieve bond release.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

Analysis:

All disturbed areas shall be returned to the approximate original contour (AOC). There will be no spoil or underground waste used to re-grade slopes to achieve AOC. Slopes for the Rilda Canyon Portal facilities will be constructed using the rock, subsoil, and topsoil material.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Analysis:

Once the structures have been removed and the portals sealed as outlined in Figure R645-301-500d, backfilling and grading will commence. Reclamation will be accomplished by systematically starting at the uppermost part of the disturbed area, working down towards the lowermost portion. Prior to initiating backfilling and grading processes, the entire area will be ripped with a dozer to a depth of approximately two feet to reduce soil compaction. Reclamation cut and fill quantities are balanced and outline in table 500-2. The table includes reclamation details for the facilities area, sediment pond, hard armor areas, topsoil pile, and out-slopes. Map

500-5 shows final reclamation topography of the entire mine site. Upon completion of backfilling, grading, and topsoil placement, the entire area will be pocked to minimize (or eliminate) erosion and sediment transport from the reclaimed site. Pocks will be constructed on sloped on 4:1 or greater. Slopes flatter than 4:1 will be roughened using a harrow or similar implement.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

MINE OPENINGS

Regulatory Reference: 30 CFR Sec. 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

Analysis:

The Rilda Canyon Portal facility includes the reclamation plans and design for the casing and sealing of both mine openings that are associated with the facility. The plan for sealing these portals consists of a permanent MSHA-approved, plug type seal with at least 25 feet of non-combustible material compacted, to the extent possible to form an earthen plug (Figure R645-301-500d in Figure Section). All concrete materials that are crushed and removed from the pad areas, storage bunkers, etc. will be permanently disposed of within the two portals Compliance to MSHA requirements for ventilation will be follows during the backfilling and grading activities.

The applicant states that each shaft, drift, adit, tunnel, exploratory hole, entryway or other opening to the surface from underground will be capped, backfilled, or otherwise properly managed consistent with MSHA, 30 CFR 75.1771 & R45-301-500.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

Analysis:

Reclamation

At the time of reclamation, Emery County Road #306 will be reconstructed in its original location and to its original design. The design and construction plans are the property of the Emery County Road District. Reclamation and replacement of the road will be completed to the standards found in these designs.

Designs for the primary road are included in Volume 11, Appendix Volume 11A, Engineering: Appendix G. These designs will be accessed and utilized to reclaim the road back to its original condition & location at the time of reclamation.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Analysis:

The applicant outlined a detailed timetable for the completion of each major step in reclamation. Pre-reclamation surface configurations for the Rilda Canyon Portal facility are located on Maps 500-3 and 500-4. These drawing show the location and extent of surface disturbances due to coal mining and reclamation activities at the portal facility. Detailed maps and plans for backfilling, soil stabilization, compacting, and grading are included. Contour maps, cross-sections, and soil placement maps are found the maps section of Volume 11. A registered professional engineer has certified all maps, designs, drawings, etc.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

RECOMMENDATIONS:

The application is recommended for approval.

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